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Level Notes and Compass Courses of the Seaboard Oil Pipe Line, from the Mouth of Black Fox Run, in Clarion County, Pa., to Patapsco River, near Baltimore, Md. Lines run by O. Barrett, Jr., C.E., Western Division; B. F. Warren, C.E., Middle Division; J. B. Haupt, C.E., Eastern Division.

GEN. H. HAUPT, CHIEF ENGINEER.

(Read before the American Philosophical Society, October 5th, 1877.)

The Seaboard Pipe Line survey line commences in the Oil Region of Western Pennsylvania, in the Valley of the Alleghany River, at a point one and a-half miles below (south of) Monterey Station on the Alleghany Valley Railroad; takes a nearly straight course over the high lands of Indiana and Cambria Counties; descends the face of the Alleghany Mountain; crosses the mountains and valleys of Middle Pennsylvania; the South Mountain range; the red sandstone plain in front of them, and the hills of Middle Maryland to Baltimore; a total distance of about 228 miles, = 1,202,828 feet.

It passes about fourteen miles south of the county town of Indiana; one mile south of Carrolton in Cambria County; crosses the Pennsylvania Railroad at Elizabeth Furnace; the Broad Top Railroad at McConnells-town; passes through Orbisonia, Shade Gap, Roxboro', Shippensburg, Gettysburg; passes one mile south of Littlestown; two and a-half miles south of Westminster; one mile south of Reisterstown; follows the ridge between Patapsco Falls and Guyron's Falls, and terminates on Curtis' Bay two miles south of Canton, on an inlet of Chesapeake Bay at Baltimore.

REMARKS.

In the column marked \triangle the distance from starting points B M are given in feet, measured on the ground (not horizontally).

The elevation is given in the second column in feet and hundredths.

NOTE. The decimal point in the 1st, 5th and 7th columns divides the distance into lengths of 100 feet. Thus: 98.35 = 9,835 feet, &c.

The courses given in the second column show the general direction. The line run varies from the general direction in many places, but is seldom more than from one to two hundred yards to right or left of the general course, and in most cases less.

The distances in the fourth column are the distances of a number of shorter courses taken by scale from the plot.

The columns of Maxima and Minima give the undulations, being ordinates at extreme elevations and depressions, or where there are changes in the slope of the ground.

Any further information desired may be obtained from B. F. Warren, 734 N. 20th Street, Philadelphia.

The degrees and minutes of courses begin with 0° at north, running 90° = E; 180° = S; 270° = W, &c.

△	Elev.	Course	Dist.	MAXIMA.		MINIMA.		
				△	Elev.	△	Elev.	
B M	807.45	Elevation of surface of water in Alleghany River at mouth of Black Fox Run.						
0.00	824.20	87 $\frac{1}{2}$ °	9155'	39.30	1143.2	50.90	1110.6	Entrance to McElroy's Coal Mine. Creek.
98.35	1231.8	118 $\frac{1}{2}$ °	20010'	91.90	1343.6	100.00	1212.0	
				121.00	1500.1	127.80	1445.9	Catfish Run.
				132.45	1496.7	168.00	1210.0	
				170.95	1222.3	178.95	1218.6	Catfish Run.
				184.45	1219.1	204.25	1100.0	
				211.90	1212.8	215.10	1209.7	Catfish Run. New Athens.
				218.15	1212.8	227.50	1185.0	
				235.80	1222.2	242.00	1184.0	Catfish Run. New Athens.
				246.10	1210.0	250.15	1198.6	
				266.15	1252.9	270.50	1235.0	Catfish Run. New Athens.
				283.80	1290.1	294.70	1271.0	
				$\frac{1}{4}$ mile to right.				Small Run.
315.70	1420.00	128 $\frac{1}{2}$ °	39230'	314.05	1436.8	321.50	1280.0	
				331.60	1413.8	337.10	1290.0	Small Run.
				346.90	1419.0	354.75	1350.0	
				360.50	1410.7	368.10	1273.0	Turkey Run. ditto.
				373.85	1368.6	389.00	1146.0	
				390.90	1182.5	408.15	1049.7	Turkey Run. ditto.
				418.35	1092.5	439.60	946.0	
				441.50	984.7	445.30	923.4	Red Bank Creek. ditto.
				450.55	949.3	456.85	848.0	
						461.00	839.0	Red Bank Creek. ditto.
				Line between Clarion and Armstrong Counties.				
				488.00	1219.6	495.20	1083.0	Creek. Run. Creek.
				504.05	1222.9	509.80	1158.0	
				518.85	1352.3	526.50	1280.0	Creek. Run. Creek.
				539.40	1384.1	557.00	1055.0	
				566.65	1375.6	574.00	1198	Br. of Mahoning Cr. Creek.
				674.55	1525.4	687.40	1356	
				694.30	1448.0	701.35	1275	Br. of Mahoning Cr. Creek.
				707.50	1352.0	730.45	997.0	
731.75	1038.5	126 $\frac{1}{2}$ °	31030'	736.15	1205.6	740.10	1090.0	Creek. Mahoning Creek. to
				762.95	1376.0	781.00	1125.0	
				811.50	1309.0	824.00	794.5	undulating to
				926.75	1450.9			
				1011.05	1493.0	1025.40	1276	Glade Run.
				1033.50	1352.0			
1044.60	1290.0	102 $\frac{1}{2}$ °	16430'	1078.90	1505.6	1085.60	1457.1	Spring Run. strong and Indiana Count's
				1098.80	1540.0	1130.50	1371.0	
1214.10	1401.0	116 $\frac{1}{2}$ °	18640'	1159.90	1550.0	1227.65	1329.0	Glade Run.
				1247.50	1413.0	1260.90	1303.0	
				1266.35	1384.0	1270.75	1257.0	Spring Run. strong and Indiana Count's
				1304.30	1350.0	1323.40	1255.0	
				1346.55	1405.0	1359.90	1287.0	Run.
				1377.00	1460	Line of Arm		
1407.10	1400.0	129 $\frac{1}{2}$ °	42860'	1387.75	1495	1411.00	1394	Run.
				1422.70	1468.0	1460.00	1345	
				1467.00	1372.0	1473.00	1286	Run.
				1486.80	1406.0	1502.30	1257	
				1507.60	1265.0	1511.00	1247	Run.
				1521.30	1503.0	1530.35	1230.0	
				1537.00	1279.0	1540.25	1187.0	Run.
				1547.00	1351.0	1552.80	1365.0	
				1561.30	1469.0	1571.25	1285.0	Run.
				1577.60	1365.0	1586.50	1193.0	
				1599.20	1337.0	1610.40	1224.0	Run.
				1615.25	1247.0	1625.50	1201.0	
				1638.80	1224.0	1663.70	1208.0	Run.
				1682.55	1274.0	1686.00	1214.0	
				1699.40	1332.0	1692.30	1173.0	Run.
				1725.20	1301.0	1735.75	1270.0	
				1745.20	1358.0	1749.70	1238.0	Run.
				1757.20	1331.0	1771.00	1227.0	
				1781.00	1383.0	1785.00	1295.0	Run.

Δ	Elev.	Course	Dist.	MAXIMA.		MINIMA.		
				Δ	Elev.	Δ	Elev.	
1842.80	1400.0	121.10'	32090'	1789.80	1344.0	1794.40	1303.0	Run.
				1802.35	1500.0	1817.75	1259.0	
				1847.30	1415.0	1863.15	1253.0	
				1881.45	1328.0	1885.00	1289.0	
				1898.40	1360.0	1906.55	1328.6	
				1911.20	1336.0	1917.00	1260.0	
				1924.00	1341.0	1931.00	1246.0	
				1950.50	1295.0	1955.00	1277.0	
				1989.65	1484.0	2002.60	1399.0	
				2018.75	1536.0	2030.80	1467.0	
				2057.30	1680.0	2073.75	1595.0	
				2078.15	1621.0	2108.10	1441.0	
				2114.50	1468.0	2126.50	1392	
				2142.95	1635	2156.10	1425	
				2159.00	1463	2165.35	1384	
2182.90	1480	119.25'	11390'	2206.80	1638	2217.25	1574	Creek 10' wide. Two Lick Creek. Run 4' wide.
				2223.25	1638	2241.15	1500	
				2253.80	1628	2264.75	1555	
				2272.00	1611	2275.30	1553	
				2281.95	1590	2290.30	1572	
2297.15	1609	169.40'	6540'	2319.80	1671.5	Divide of Two Lick and Mahoning Cr'ks		Run. Run. Br. of Two Lick Creek.
2368.50	1433.5	124.10	20690'	2376.15	1440	2372.60	1380	
				2450.45	1593	2407.30	1374	
2579.60	1544.7	156.10'	16520'	2556.00	1607	2504.80	1527	Creek.
				2603.30	1557.5	2521.90	1421	
				2626.15	1625	2613.00	1442	
				2652.95	1666	2640.15	1497	
				2701.05	1962	2661.00	1612	
				2714.60	1959	2710.20	1934	
				2745.55	1986	2732.00	1870	
2751.00	1978	129.45'	32020'	2804.45	1811	2781.65	1831	Run.
				2818.40	1858	2808.50	1786	
				2851.70	1894	2833.55	1807	
				2882.35	1896	2860.00	1868	
				3019.30	2014	2909.00	1898	
3075.80	2055.0	107.40'	13820'	3066.95	2096	3027.00	1984	Spring.
				3143.55	2144	3081.00	2005	
				3171.70	2099	3165.70	2015	
3220.15	2060.9	102.50'	10330'	3200.25	2118	3187.75	2083	Creek.
3324.10	1855	127.30'	6610'	3233.50	2090	3214.30	2015	
				3277.75	2131	3267.30	2036	
3515.00	1747.3	88.35'	5480'	near ly lev el.		3369.10	1766	Creek. Same Creek. Laurel Run. Chestnut Creek. Run. Run. Run. Same Run.
						3380.00	1757	
						3398.50	1752	
						3406.00	1751	
						3422.00	1754	
				3414.30	1880	3473.40	1814.0	
				3456.30	1981	3500.20	1825	
				3494.00	1917	3514.75	1747	
				3505.60	1876	3515.75	1744	
				3522.40	1765	3524.00	1761	
3607.90	1859.3	105.30'	12510'	3532.45	1990	3550.30	1768	Run. Creek. Creek.
				level.		3565.75	1687	
				3581.05	1875	3594.75	1722	
				3606.65	1877	3615.40	1778	
				3630.85	1868	3640.30	1785	
3741.30	1808.5	72.35'	8430'	3657.15	1868	3669.00	1798	Creek. Creek. Clearfield Creek.
				3765.10	2030	3699.00	1600	
				3796.85	2140	3773.75	1961	
				3824.50	2185	3804.80	2108	
3826.60	2180	65.30'	7980'	3828.25	2194	3843.30	1910	Laurel Run.
				3862.00	2134	3871.90	2110	
				3888.00	2183	3904.95	1986	
3906.90	2020.0	62.45'	7805'	uniform rise		3953.10	2256	Creek.

Δ	Elev.	Course	Dist.	MAXIMA.		MINIMA.		
				Δ	Elev.	Δ	Elev.	
3986.00	2408.0	64.30'	7315'	4028.20	2537'	4038.40	2464'	Line bet. Cambria & Blair co
4059.60	2564	118.00'	20775'	4054.95	2596	4087.00	2297	Head of Creek.
				4064.50	2570	4101.85	1992	
				4092.10	2233	4122.15	1722	
				4124.25	1729	4126.30	1663	
				4142.85	1642	4133.35	1606	Creek.
				4150.00	1637	4146.50	1627	Creek.
				4154.90	1607	4161.30	1390	Creek. Creek. Creek 15' wide.
						4181.20	1304	
						4237.45	1175	
						4249.00	1154	
						4256.90	1149	
4287.20	1198	88.00	4605'	4261.10	1175	4272.30	1126	
				4275.00	1138	4282.50	1118	
				4293.80	1248	4297.75	1222	
				4301.25	1246			
				4310.95	1242	4322.90	1067	
4344.00	1044.6		B.M.	M. Div.		= 1056.8		Error = 0.4.

MIDDLE DIVISION.

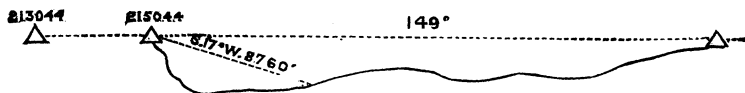
B.M. = 1057.2

O.MD	1044.6	110.45'	11450'	31.40	1089'	34.15	1053'	
				73.63	1102	37.15	1053	Creek.
				100.87	1158	94.75	1130	Creek.
						101.60	1154	Creek.
115.38	1328.6	75.45'	7710'			107.50	1201	Creek.
				118.82	1415	124.09	1507	
				137.48	1927	140.19	1974	
				156.48	2412	Sum mit of		W. Brush Mt.
199.48	1731.5	71.30'	7190'	205.98	1708	219.00	1327	Run.
273.93	1104.5	132.35'	4920'			240.90	1114	Sinking Valley.
				288.04	1107	300.40	1046	
				313.02	1159	316.10	1141	
						333.60	1272	
323.42	1192.79	127.15'	28790'			340.40	1347	Run.
						343.59	1395	Run.
				349.34	1667	362.56	1843	
				374.51	2240	Sum mit of		E. Brush Mt
						415.76	1168	Canoe Creek.
				456.98	1862	460.84	1835	
				470.02	1907	475.47	1903	
				478.60	1940	Sum mit of		Canoe Mt.
						485.69	1667	
				496.09	1530	504.76	1249	
619.15	821.4	140.15'	34030'	507.13	1229	518.00	1083	Run.
				521.09	1136	537.28	1039	
				550.88	1013	553.00	923	
				504.67	1012	578.14	835	Creek.
				582.10	882			
				587.43	927	599.00	780	Roaring Run.
						601.43	746.6	Juniata River.
				628.77	886	635.60	740	
				670.60	1340			
				672.70	1364	675.00	1345	
				680.40	1493			
				695.40	1907	Sum mit of		Tussey Mt.
				715.97	1266	721.38	1259	Creek.
						740.49	1650	
				756.61	2296	Sum mit of		Tussey Mt.
				765.95	2328	780.00	2178	

Δ	Elev.	Course	Dist.	MAXIMA.		MINIMA.		
				Δ	Elev.	Δ	Elev.	
				782.24	2189'	799.35	1787'	
				805.68	1707	825.85	1143	Run.
						844.00	936	Run.
				856.37	897	863.05	813	
				867.79	920	882.24	791	
				888.07	862	892.40	794	
						905.00	772	
				910.20	868	915.60	772	
				921.54	868	925.00	827	
				930.82	872			
				*		962.75	650	
961.37	672.6	161.15'	8530'			1007.46	660	Creek.
See	note	bel'w		975.12	666	1013.08	630	Creek.
						1031.60	773	
				1035.43	849	1037.53	844	
				1047.14	1137.6	Sum	mit of	Pine Ridge.
1052.28	1072	138.45'	37040'			1067.40	752	
				1074.80	860	1080.38	769	Creek.
				1121.55	993	1126.00	910	
				1132.88	1016	1141.24	912	Run.
				1144.60	1022	1147.70	1013	
				1156.30	1193	1163.04	1050	
				1176.10	1254	1184.00	1019	
				1190.50	1082	1197.90	886	Creek.
				1205.70	1005	1213.20	762	Spring.
				1219.50	819	1256.90	625.3	Raystown Br.
				1285.04	1684	Sum	mit of	Terrace Mt.
						1301.40	1430	
				1304.30	1473	1313.44	1412	
				1320.50	1419	1355.60	1250	Little Trough Creek.
				1368.10	1364	1371.22	1325	
				1391.75	1652	Sum	mit of	Sideling Hill.
				1408.50	1224	1413.37	1100	Creek.
						1425.10	969	Creek.
1429.05	956	140.20'	26375'	1450.92	1242	1461.80	950	Creek.
				1469.20	1054	1474.70	924	
						1481.80	803	Creek in Hares' Valley.
				1495.20	871	1523.36	1269	
				1541.00	1840	Sum	mit of	Jacks Mt.
						1552.50	1653	
				1556.00	1682	1564.70	1631	
				1575.00	1776	1582.80	1582	Creek.
				1585.50	1564	1591.80	1513	
				1611.10	1726	1636.10	1424	
				1637.80	1402	1652.10	1109	
						1657.60	1076	
				1668.70	1083	1679.00	1036	Creek.
1695.74	987	182.30'	11130'	1697.80	964	1784.10	741	Creek.
				1787.54	759			
						1834.70	660	
				1883.10	790	1893.00	670	Gt. Aughwick Cr.
				1930.00	1022	1931.50	960	
				1937.60	1010	1961.20	640	
				1966.00	691	1970.10	708	
				1990.10	692	2006.70	725	Orbisonia.
				2023.70	751	2073.80	726	Rock Hill Gap,
† 2130.44	830	149.00'	26690'			2148.30	835	Creek.
See	note	bel'w						

*NOTE.—From Δ 975.12 there appears to be a constant error amounting to 161' at B.M.; this error should be distributed uniformly—as from tests the variation is constant and uniform.

† From 2150.44 the line follows the general direction of the road through Shade Gap and diverges considerably from a straight line, thus:



Δ	Elev.	Course	Dist.	MAXIMA.		MINIMA.		
				Δ	Elev.	Δ	Elev.	
				2211.50	870'	2244.15	890'	Creek 20' wide.
				2245.40	903	2255.20	910	Creek.
				2304.70	1094	2322.00	1095	Creek.
				2325.40	1121	2346.70	1097	
				2364.10	1105	2392.60	1111	
						2404.15	1105	Creek.
				2442.90	1150	2454.20	1132	
				2469.10	1167	2475.80	1162	Creek.

If the line be run directly across the mountains on the course 149° it will give the following Maxima and Minima (approximately).

Line across the Mts. from								
				2200.00	1770'	2150.69	842'	
				2290.00	1340	2216.20	1325	
				2258.00	1160	2247.00	1020	
				2500.00	1530	2266.50	1070	
						2312.00	1380	
				2328.00	1340	2322.00	1300	
						2337.50	1323	
						2342.00	1260	
				2360.00	1500	2377.60	1180	
				2385.00	1220	2475.77	1162	Creek.

2475.77	1162	136° 15'	13230'			2489.40	1249'	
				2519.10	2060'	2503.00	1518	
2618.81	1002	115° 15'	7750'	2645.00	976	2531.20	1601	Creek.
2697.30	1040	79° 00'	2550'	2681.00	1002	2561.20	1200	
2723.20	947	92.30	8930	2737.70	1023	2674.20	945	
				2758.20	1224	2694.00	1030	
2826.87	1710	119° 00'	17080'	2797.00	2020	2751.70	1180	Creek.
				2864.00	1397	2764.80		Mts.
				2876.30	1360	Kittatinny		
						2868.60	1250	
				2920.80	1272	2894.30	1377	
				2944.00	1030	2916.80	1258	
3028.47	895	120° 55'	22720'	3090.80	844	2942.10	949	Conodogwined Creek.
				3111.73	865	2952.00	942	ditto.
				3146.50	849	3108.90	844	
				3164.80	855	3139.00	768	
				3193.00	824	3151.00	810	Creek.
				3260.80	844	3175.40	750	Creek.
3266.41	840	125° 00'	21320'	3305.30	780	3229.30	700	Conodogwined Creek.
				3400.00	885	3348.50	873	
				3458.80	835	3435.70	849	berland Counties,
				3499.30	821	3464.60		Line of Franklin and Cum-
3499.28	821			B.M. E. Div. = 821. Error 161'.				Shippensburg.

EASTERN DIVISION.

O BM	659.333	133° 35'	13720'			1140	651'	
				24.00	699'	33.50	671	
				45.70	744	54.00	707	
				63.50	814	79.00	725	
				117.30	773			
				140.00	818			
147.00	856	133° 50'	34830'	188.00	988	207.00	1450	
				211.50	1305	240.00	1130	Creek.
				261.50	1568	278.00	1340	
				348.50	1914	364.50	1861	
				379.50	1953	391.50	1718	Creek.

△	Elev.	Course	Dist.	MAXIMA.		MINIMA.		
				△	Elev.	△	Elev.	
				396.00	1800'	401.00	1718'	between Cumb. and Adams Creek.
				423.00	1914	427.50	Line	
				477.00	1047	452.00	1425	
				492.00	1657			
496.50	1635	109.30'	7035'	531.00	1282	523.00	1236	Creek.
567.00	1112	109.30'	6880'	574.30	1102	555.50	1113	
636.00	863	138.10	26670			622.00	825	Conewago Creek.
				721.00	812	660.00	732	Creek.
				773.80	766	767.00	705	
				816.50	786	829.00	673	
				838.15	728	877.65	671	
				886.50	643	889.20	666	
				895.25	616			
917.37	630	141.20'	21700'	928.50	654	938.00	613	
				955.00	666	972.20	668	
				987.50	624	1015.00	575	
				1040.70	636	1055.00	525	Creek.
						1069.75	495	
				1077.50	537	1082.35	517	
				1086.50	533	1091.50	496	
				1095.00	514	1103.00	495	
				1104.00	507	1114.60	489	
				1120.00	496	1142.00	461	Strikes Rock Creek.
1145.00	460	175.30'	10950'	Running along		Rock		Creek.
1256.00		155.30	13920	1261.00	480	1275.00	448	
				1284.00	Leaves	Rock Creek		
				1303.00	472	1313.50	550	
				1330.50	568	1338.00	442	
						1351.00	442	
				1363.00	509	1383.60	414	White Run.
1397.18		126.40'	22300'	1427.50	531	1432.50	508	
				1438.50	528	1443.00	506	
				1447.00	522	1450.00	506	
				1458.00	538	1462.25	528	
				1468.00	535	1472.00	533	
				1479.00	497	1482.50	514	
						1492.40	482	Creek.
				1499.00	524	1533.00	525	Creek.
				1558.00	537	1582.00	510	Creek.
				1606.30	584			
1621.27		136.30'	28680'	1658.20	524	1626.80	515	Creek.
				1691.40	611	1679.70	564	
				1714.97	641	1696.70	585	
				1735.70	604	1718.50	632	
				1758.10	615	1746.20	551	Creek.
				1778.41	596	1776.20	547	
				1829.70	706	1788.40	574	
				1856.00	Line	1851.93	605	Creek.
						bet. Penn		a. and Maryland.
						1884.70	638	
1926.16	755	137.00'	29140'	1907.70	731	1937.70	693	
				1943.50	735			
				1952.70	666	1954.25	618	Creek.
						1972.70	582	
				2013.70	790	2022.70	700	
				2025.70	707	2027.20	686	
				2029.70	724	2031.20	700	
				2048.70	792	2059.70	667	
				2069.00	789	2062.00	603	Creek.
				2095.70	716	2110.70	576	
				2120.70	762	2125.70	720	
				2129.25	746	hol		
				2147.70	718	2150.20	683	
				2164.20	698	2166.70	657	
				2171.20	673	2182.45	587	Creek.
						2186.70	593	Creek.
				2189.70	684	2196.70	607	Creek.

△	Elev.	Course	Dist.	MAXIMA.		MINIMA.		
				△	Elev.	△	Elev.	
2227.70	706.3	137.30'	9775'	2197.25	620'	2229.50	680'	Creek.
				2242.70	725	2252.70	676	
				2256.70	745			
				2264.70	755	2269.70	726	
				2274.00	742	2281.70	674	Creek.
				2288.70	751	2291.70	730	
				2297.70	767	2311.70	678	
2328.70		188.30'	7150'	2330.20	797	2340.70	739	
				2369.70	880	2382.70	795	Creek.
				2396.70	826			
2405.08		152.05'	27870'	2443.70	861	2418.70	732	
				2471.45	914	2452.20	776	
				2481.00	971	2492.20	870	
				2504.70	891			
				2508.45	906			
				2523.70	874	2532.70	819	
				2540.70	843	2543.70	834	
				2563.70	864	2576.20	803	
				2585.35	813	2598.70	814	
						2632.70	738	
				2644.30	780	2652.70	757	
						2662.70	717	
				2676.70	735			
				2696.70	743			
2697.70		152.00'	26340'	2722.70	733	2702.20	707	
				2732.70	685	2727.70	650	
				2742.20	649	2745.20	585	
				2747.70	620			
				2752.70	644	2762.70	489	E. Br. Patapsco. Run. Deep Run.
				2785.70	652	2798.20	530	
				2799.70	541	2802.45	461	
				2810.00	520			
				2812.70	534	2820.70	467	
				2831.70	612	2838.70	464	
						2841.70	461	
				2846.70	529	2849.00	501	
				2855.20	604	2859.70	557	Creek.
				2865.70	590	2867.70	544	
				2879.70	572	2885.70	552	
						2886.70	511	
				2888.70	540	2908.00	429	Great Run.
						2916.70	453	
				2923.00	526	2924.70	467	
				2923.20	Line	of Carroll		
				2929.00	532	2938.10	499	and Baltimore Counties.
				2943.70	531	2944.70	508	
				2949.70	519	2951.45	473	
				2954.70	537	2957.70	509	
						2959.70	469	
				2976.30	584			
				3047.10	574	3053.00	475	
2981.60	522	190.30'	9460'			3053.70	474	
				3068.70	541	3070.70	532	Creek.
				3077.00	606	3078.00	593	
				3085.20	612	3086.70	626	
				3090.70	633			
				3099.30	634	3113.70	556	Creek. Run.
				3123.70	605	3143.45	568	
				3151.00	671			
				3163.30	688	3169.70	626	
				3173.70	639	3187.70	536	Creek.
						3191.70	511	
3188.50	533	167.00'	9170'	3204.10	613			
				3210.70	647	3215.20	625	
				3226.40	683	3237.00	600	
				3241.20	620	3248.20	537	
				3265.70	677	3281.70	677	

△	Elev.	Course	Dist.	MAXIMA.		MINIMA.		
				△	Elev.	△	Elev.	
3297.60		149° 15'	12510'	3284.70	702'	3288.20	659'	Creek.
				3291.20	693			
				3303.70	651	3298.70	616	
				3320.70	698	3309.20	600	
				3352.70	662	3345.70	639	
				3365.50	650	3364.00	645	
				3371.70	659	3368.20	641	
						3381.70	581	
3428.70	623	142° 45'	18890'	3400.70	591	3393.30	547	Creek.
				3403.70	590	3401.70	567	
				3413.20	616	3407.00	558	
						3417.00	579	
				3454.70	622	3436.20	533	
				3472.70	606	3464.70	573	
						3480.20	487	
				3498.70	577	3505.70	564	
3620.70	490.5	167° 45'	10500'	3503.70	578	3512.70	543	Creek.
						3532.60	484	
				3550.70	591	3561.00	589	
				3574.70	593	3580.70	563	
				3585.10	574	3610.70	500	
				3616.45	514			
				3636.20	505	3630.70	483	
				3649.20	518	3641.70	503	
3743.45		172° 30'	12820'	3675.70	579	3664.70	508	Creek.
				3699.70	518	3689.70	501	
				3739.80	524	3720.70	511	
						3765.20	494	
				3781.70	525	3805.70	478	
				3815.70	481	3847.20	400	
						3880.70	439	
				3883.70	449	3901.20	384	
3874.70	450.6	142° 00'	16735'	3911.20	423	3917.45	393	Creek.
				3980.70	510	3998.45	464	
				4002.20	480	4039.20	326	
						4043.70	337	
				4049.70	398			
				4069.70	326	4065.70	317	
				4079.70	315	4076.20	288	
				4109.10	224	4099.70	214	
4050.20	395	127° 30'	13070'	4121.70	173	4115.10	165	Creek.
				4121.70	173	4136.70	95	
				4050.70	171	4069.70	98	
				4085.70	159			
				4090.70	234	4213.70	79	
				4221.35	123	4227.40	96	
				4236.20	140	4241.70	83	
				4250.20	158			
4185.00		125° 40'	15630'	4264.70	147	4265.70	123	Pond extends to 4275.70.
				4281.70	144	4290.70	89	
				4294.70	119	4302.70	61	
						4346.70	0	
				4310.55	125			
Patapsco R., about 6 miles below Baltimore.								